

**AMENDMENTS TO THE CLAIMS**

**Please amend the claims as follows.**

**Please cancel claim 51 without prejudice or disclaimer.**

1. (Currently Amended) A computer-readable medium holding instructions executable in a computing device, the medium comprising one or more instructions for:

generating a result from executing a block diagram model of a biological process with a simulation engine;

gathering data directly from an in situ experimental device on which an ongoing in situ experiment of the biological process is conducted;

comparing the generated result to the data gathered from the experimental device with an analysis environment that is in communication with the simulation engine; and

modifying the model of the biological process based on the comparison to correct the model of the biological process; ~~and~~

~~saving the modified model in a storage or displaying the modified model on a display device.~~

2. (Previously Presented) The medium of claim 1 wherein the analysis environment outputs results of analysis performed by the analysis environment.

3. (Previously Presented) The medium of claim 1 further comprising:

displaying at least one of the result generated by the simulation engine or the data gathered from the experimental device.

4. (Previously Presented) The medium of claim 1, further comprising one or more instructions for:

determining a difference between the result and the data gathered from the experimental device; and



generating an event signal when the difference between the result and the data gathered from the experimental device exceeds a predetermined threshold.

5. (Previously Presented) The medium of claim 1 further comprising one or more instructions for constructing the model of the biological process with a modeling environment.

6. (Previously Presented) The medium of claim 5 wherein the modeling environment includes a graphical user interface for accepting at least one of user commands or data to construct the model of the biological process.

7. (Previously Presented) The medium of claim 5 wherein the analysis environment is in communication with the modeling environment.

8. (Previously Presented) The medium of claim 7 wherein the analysis environment transmits to the modeling environment the data gathered from the experimental device.

9. (Previously Presented) The medium of claim 8 wherein the modeling environment uses the transmitted data to refine the model of the biological process.

10. (Previously Presented) The medium of claim 1 wherein the analysis environment gathers data from a microarray.

11. (Previously Presented) The medium of claim 1, further comprising one or more instructions for gathering data from a gene chip.

12. (Currently Amended) A method for modifying a model of a biological process, the method comprising:

accessing a block diagram model of the biological process;

generating a result from an execution of the model of the biological process;

gathering data directly from an in situ experimental device on which an ongoing in situ experiment is conducted; and

comparing the generated result to the data gathered from the ongoing in situ experiment;



modifying the model of the biological process based on the comparison to correct the model of the biological process;

~~saving the modified model in a storage or displaying the modified model on a display device.~~

13. (Previously Presented) The method of claim 12 further comprising displaying at least one of the generated result or the data gathered from the experimental device.

14. (Previously Presented) The method of claim 13 wherein displaying comprises graphically displaying the at least one of the generated result or the data gathered from the experimental device.

15. (Previously Presented) The method of claim 13 further comprising:

determining a difference between the result and the data gathered from the experimental device; and

generating an event signal when the difference between the generated result and the gathered data exceeds a predetermined threshold.

16. (Previously Presented) The method of claim 12 further comprising accepting at least one of user commands or data to construct the model of the biological process.

17. (Previously Presented) The method of claim 16 wherein the at least one of user commands or data is accepted via a graphical user interface.

18. (Previously Presented) The method of claim 16 further comprising transmitting the gathered data to a modeling environment configured to model the biological process.

19. (Previously Presented) The method of claim 18 further comprising generating, by the modeling environment, a refined model of the biological process using the transmitted data.

20. (Previously Presented) The method of claim 12 wherein conducting further comprises conducting the in situ experiment using a microarray.



21. (Previously Presented) The method of claim 12 wherein conducting further comprises conducting the in situ experiment using a gene chip.

22. (Currently Amended) An apparatus comprising:

means for accessing a block diagram model of a biological process;

means for generating a result from an execution of the model of the biological process;

means for gathering data directly from an in situ experimental device on which an ongoing in situ experiment of the biological process is conducted;

means for comparing the generated result to the data gathered from the experimental device; and

means for modifying the model of the biological process based on the comparison to correct the model of the biological process; ~~and~~

~~means for saving the modified model in a storage or displaying the modified model on a display device.~~

23. (Previously Presented) The apparatus of claim 22 further comprising means for displaying at least one of the result or the data gathered from the experimental device.

24. (Previously Presented) The apparatus of claim 22 further comprising:

means for determining a difference between the result and the data gathered from the experimental device; and

means for triggering an alarm when the difference between the generated result and the gathered data exceeds a predetermined threshold.

25. (Previously Presented) The apparatus of claim 22 further comprising means for accepting at least one of user commands or data to construct the model of the biological process.

26. (Previously Presented) The apparatus of claim 22 wherein the at least one of user commands or data is accepted via a graphical user interface.



27. (Previously Presented) The apparatus of claim 22 further comprising means for generating a refined model of the biological process using the data gathered from the experimental device.

28. (Currently Amended) A computer-readable medium holding instructions executable in a computing device, the instructions comprising one or more instructions for:

generating a result from executing a block diagram model of a biological process;

gathering data directly from an in situ experimental device on which an ongoing in situ experiment of the biological process is conducted;

comparing the result to the data gathered from the experimental device; and

modifying the model of the biological process based on the comparison; ~~and~~

~~saving the modified model in a storage or displaying the modified model on a display device.~~

29. (Previously Presented) The medium of claim 28 further comprising one or more instructions for:

displaying at least one of the generated result or the data gathered from the experimental device.

30. (Previously Presented) The medium of claim 29 wherein the at least one of the generated result or the data gathered from the experimental device is displayed in a graphical display.

31. (Previously Presented) The medium of claim 28 further comprising one or more instructions for triggering an alarm when the difference between the generated result and the data gathered from the experimental device exceeds a predetermined threshold.

32. (Previously Presented) The medium of claim 28 further comprising one or more instructions for constructing a model of the biological process with a modeling environment.



33. (Previously Presented) The medium of claim 32 wherein the modeling environment includes a graphical user interface and the medium further comprises one or more instructions for accepting at least one of user commands or data to construct the model of the biological process via the graphical user interface.

34. (Previously Presented) The medium of claim 32 wherein the comparing is performed in an analysis environment and the analysis environment is in communication with the modeling environment.

35. (Previously Presented) The medium of claim 34 wherein the analysis environment transmits to the modeling environment the data gathered from the experimental device.

36. (Previously Presented) The medium of claim 35 wherein the modeling environment uses the transmitted data to refine the generated model of the biological process.

37. (Withdrawn) A method for modifying a model of a chemical reaction, the method comprising:

accessing, by a simulation engine, a block diagram model of the chemical reaction;

generating, by the simulation engine, a result from executing the model of the chemical reaction;

gathering data relating to an ongoing in situ experiment directly from an in situ experimental device on which the in situ experiment is being conducted;

comparing, by an analysis environment, the generated result to the data gathered from the in situ experimental device; and

modifying the model of the chemical reaction based on the data relating to the ongoing experiment to correct the model of the chemical reaction; ~~and~~

~~saving the modified model in a storage or displaying the modified model on a display device.~~



38. (Withdrawn) The method of claim 37 further comprising displaying, by the analysis environment, at least one of the result generated by the simulation engine or the data gathered from the experimental device.

39. (Withdrawn) The method of claim 38 wherein displaying comprises graphically displaying at least one of the result generated by the simulation engine or the data gathered from the experimental device.

40. (Withdrawn) The method of claim 37 further comprising:

determining a difference between the generated result and the data gathered from the experimental device; and

triggering an alarm when the difference between the generated result and the gathered data exceeds a predetermined threshold.

41. (Withdrawn) The method of claim 37 further comprising accepting, via a modeling environment, at least one of user commands or data to construct the model of the chemical reaction.

42. (Withdrawn) The method of claim 41 wherein the modeling environment accepts the at least one of user commands or data via a graphical user interface.

43. (Withdrawn) The method of claim 41 further comprising transmitting the gathered data to the modeling environment.

44. (Withdrawn) The method of claim 43 further comprising generating, by the modeling environment, a refined model of the chemical reaction using the transmitted data.

45. (Withdrawn) ~~An~~A computer-readable medium holding instructions executable in a computing device, the instructions comprising one or more instructions for:

accessing a block diagram model of the chemical reaction;

generating a result from executing the model of the chemical reaction;



gathering data relating to an ongoing in situ experiment of the chemical reaction directly from an in situ experimental device on which the ongoing in situ experiment is conducted;

comparing the generated result to the data gathered from the experimental device; and

modifying the model of the chemical reaction based on the data relating to the ongoing experiment to correct the model of the chemical reaction; ~~and~~

~~saving the modified model in a storage or displaying the modified model on a display device.~~

46. (Withdrawn) The computer-readable medium of claim 45 further comprising one or more instructions for displaying at least one of the generated result or the data gathered from the experimental device.

47. (Withdrawn) The computer-readable medium of claim 45 further comprising one or more instructions for:

determining a difference between the result and the data gathered from the experimental device; and

triggering an alarm when the difference between the generated result and the gathered data exceeds a predetermined threshold.

48. (Withdrawn) The computer-readable medium of claim 45 further comprising one or more instructions for accepting at least one of user commands or data to construct the model of the chemical reaction.

49. (Withdrawn) The computer-readable medium of claim 45 further comprising one or more instructions for accepting at least one of user commands or data via a graphical user interface to construct the model of the chemical reaction.

50. (Withdrawn) The computer-readable medium of claim 45 further comprising one or more instructions for generating a refined model of the chemical reaction using the data gathered from the experimental device.



51. (Canceled)